

What is claimed is:

1. An information recording apparatus comprising:

a recording medium having two information recording layers stacked one upon the other in which information is recorded as their states are varied upon light irradiation;

a light source;

an optical system for focusing light from said light source selectively on a first information recording layer located closer to the side on which the light is incident and on a second information recording layer farther from the side on which the light is incident;

a first photodetector for detecting light reflected by either said first or said second information recording layer on which the light from said light source is focused;

a second photodetector for detecting light reflected by said first information recording layer when the light from said light source is focused on said second information recording layer; and

a control circuit for controlling the power of the light with which said second information recording layer is irradiated, based on a detection signal from said second photodetector.

2. The information recording apparatus according to claim 1, further comprising a table in which a relationship between the detection signal from said second photodetector and the power of the light with which said second information recording layer is irradiated is stored.

3. The information recording apparatus according to claim 2, wherein said table stores a relationship between the power of the light with which said second information recording layer is irradiated and the detection signal from said second photodetector when said first information recording layer is recorded, and a

relationship between the power of the light with which said second information recording layer is irradiated and the detection signal from said second photodetector when said first information recording layer is not recorded.

4. The information recording apparatus according to claim 1, further comprising a decision circuit for determining whether or not the output of said second photodetector exceeds a predetermined threshold, wherein said control circuit is adapted to switch the power of the light with which said second information recording layer is irradiated, in accordance with the result of determination by said decision circuit.

5. The information recording apparatus according to claim 1, wherein said second photodetector is disposed outside the periphery of said first photodetector.

6. An information recording method for recording information in a recording medium having two information recording layers stacked one upon the other in which information is recorded as their states are varied upon light irradiation, said method comprising the steps of:

acquiring, in a test writing operation, a first optimum power value for recording, through a recorded region in a first information recording layer located closer to the side on which light is incident, in a second information recording layer located farther from the side on which light is incident, and the intensity of a first reflected light from said first information recording layer at that time, and a second optimum power value for recording, through an unrecorded region in said first information recording layer located closer to the side on which light is incident, in said second information recording layer located farther from the side on which light is incident, and the intensity of a second reflected light from said first information recording layer at that time;

detecting the intensity of reflected light from said first information

recording layer when light is focused on said second information recording layer;  
and

controlling the power of the light with which said second information recording layer is irradiated, based on the detected signal.

7. The information recording method according to claim 6, wherein the power of the light with which said second information recording layer is irradiated is equal to a power value obtained by linearly interpolating said first optimum power value for said first reflected light intensity and said second optimum power value for said second reflected light intensity with the intensity of the reflected light that has been detected.

8. The information recording method according to claim 6, further comprising the step of calculating a decision threshold from said first reflected light intensity and said second reflected light intensity, wherein the power of the light with which said second information recording layer is irradiated is switched depending on whether or not the detection signal exceeds said decision threshold.

9. The information recording method according to claim 6, wherein said first optimum power value and said second optimum power value are determined by measuring a jitter.

10. The information recording method according to claim 6, wherein said first optimum power value and said second optimum power value are determined by measuring asymmetry.

11. The information recording method according to claim 6, wherein said first optimum power value and said second optimum power value are determined by measuring modulation.

12. An information recording method for recording information in an information recording medium having two information recording layers stacked one upon the other in which information is recorded as their states are varied upon light irradiation, said method comprising the steps of:

acquiring, in a test writing operation, a first optimum power value  $P_0$  for recording, through a recorded region in a first information recording layer located closer to the side on which light is incident, in a second information recording layer located farther from the side on which light is incident, and a second optimum power value  $P_1$  for recording, through an unrecorded region on said first information recording layer, in said second information recording layer; and

recording information by focusing light on said second information recording layer, using a write power  $P$  such that  $P_0 < P < P_1$  or  $P_0 > P > P_1$  is satisfied.